



## **Leto 1.5 Vacuum Tube Preamplifier Owner's Manual**

Please read carefully before  
installing and operating this equipment

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**Made in the USA  
Using US and Imported Parts**

Dear Music Lover,

I wanted to personally thank you for your purchase of my Leto Preamp.

I have loved music all my life – as a musician, record producer and audio engineer. That makes me fussy about sound. That's a good thing.

Each unit is built by hand with precision and pride to produce the most enjoyable listening experience for you.

I am proud to put my name on it and honored to share this with you.

Wishing you many happy years of listening!

Sincerely,

-- George Counnas, President of Zesto Audio

**FYI:**

**Zesto** is Greek for hot

**Leto** is the mother of Apollo

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## What's in the box?

Leto 1.5 Preamp  
Leto Remote Control  
2 12AX7 Vacuum Tubes  
2 12AU7 Vacuum Tubes  
White glove for handling tubes  
IEC power cable 6'  
Not Included: Interconnect cables

## Warning and Caution

**WARNING:** The triangle with the lightning flash symbol displayed on the unit advises the user of dangerous uninsulated voltage inside the product's enclosure.

**CAUTION:** To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified personnel service this component.

1. **OWNER'S MANUAL:** Before powering up the equipment, read all safety and operating instructions and follow them as instructed. Retain the safety and operating instructions for future reference.
2. **ATTACHMENTS:** Use only those attachments recommended by the unit manufacturer, as others may cause hazards.
3. **ACCESSORIES:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing injury to a person or damage to the unit. Mount the unit according to the manufacturer's instructions with the suggested mounting accessory.
4. **WALL OR CEILING MOUNTING:** Do not mount the unit on a wall or ceiling.
5. **WATER AND MOISTURE:** Do not use the unit near water (for example, near a swimming pool, bath tub, wash bowl, kitchen sink, or laundry tub) or in a damp environment (like a basement or outside in the rain).
6. **OBJECT AND LIQUID ENTRY:** Do not push objects of any kind into the unit through openings as they could touch dangerous voltage points and short-out parts, possibly resulting in a fire or electric shock. Do not spill liquid of any kind on the unit. If water or any metal object (such as a paper clip, coin, or staple) accidentally falls inside the unit, disconnect it from the AC power source immediately and contact Zesto Audio for further instructions.
7. **HEAT:** Position the unit away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.

8. **VENTILATION:** Slots and openings in the enclosure create ventilation to protect the component from overheating. All of these openings must remain unobstructed. Allow at least six inches of clearance above the unit, 0.5 inch below and an opening behind the unit for airflow. Do not place the unit on a bed, sofa, rug, built-in bookcase, or rack without adequate ventilation.
9. **GROUNDING OR POLARIZATION:** As a safety feature, the unit may be equipped with a polarized alternating current line plug in which one blade is wider than the other and has an additional grounding blade. This plug will fit into the power outlet only one way. If you cannot insert the plug fully into the outlet, try reversing the plug. If the plug still will not fit, contact a licensed electrician to update your outlet. Do not defeat the safety purpose of the polarized plug.
10. **POWER SOURCES:** Operate the unit only from the power source indicated on the marking label on the back of the unit. If you are unsure of the type of power supplied to your home, consult your unit dealer or local power company.
11. **POWER CORD PROTECTION:** Arrange power supply cords so that they do not suffer from foot traffic or pinching by items placed on or against them. Pay close attention to cords where plugs enter the AC outlet and where they exit from the unit.
12. **LIGHTNING:** For added protection during a lightning storm or when the component is idle for long periods of time, unplug the unit from the wall outlet. This will help protect the unit from lightning and power line surge damage.
13. **POWER LINES:** Do not locate an outside antenna system in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside antenna system, take extreme care to avoid touching the power lines or circuits; contact with them could be fatal.
14. **OVERLOADING:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this increases the risk of fire or electric shock.
15. **REPLACEMENT PARTS:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or those having the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock or other hazards.
16. **SAFETY CHECK:** Upon completion of any service or repairs to the unit, ask the service technician to perform safety checks to ensure the unit is in proper operating condition.
17. **IMPORTANT SAFETY NOTE:**
- Before connecting a new product such as the Leto 1.5 Preamp to your audio or home theater system, turn off all other equipment (preferably unplugging them from the AC power source). Many audio components feature automatic turn-on circuits that may activate during an installation, potentially causing damage to electronic components or speakers. This type of damage is not covered by product warranties, and Zesto Audio specifically disclaims responsibility for any such damage.
  - **Power Cord:** The removable IEC power cord provided with your unit was specifically designed for use with this product, but other AC cords may be used. Consult your dealer for advice on AC power cords and high quality wire in your system.
  - **AC Fuse:** The fuse is located inside the IEC power entry connector and is not user serviceable. If the unit does not power up, contact an authorized service representative.
  - **Wiring:** Cables running inside walls should have the appropriate markings to indicate compliance and listing by the UL, CSA or other standards required by the UL, CSA, NEC, or your local building code. Questions about cables inside of walls should be directed to a qualified custom installer, licensed electrician, or low-voltage contractor.

18. **RECORDING COPYRIGHT:** Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

19. **FCC INFORMATION FOR USER:**

- **CAUTION:** Any changes or modifications not expressly approved by Zesto Audio could void the user's authority to operate the equipment.
- These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instructions it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the equipment.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from where the receiver is connected.

## Rear Panel Inputs and Controls



Power ON/OFF switch .....	Turns the unit ON/OFF (located on side panel).
IEC Power entry connector .....	110/120V AC power input. (Optional factory installed 240V mains)
Remote bypass switch .....	Just in case remote is misplaced. Turn switch up to override mute.
Cinema Bypass .....	Cinema out from Input 1
Inputs 1, 2 & 3 .....	RCA single ended (SE) High quality recessed gold pin connectors
Inputs 4 & 5 .....	XLR True floating balanced transformer Inputs. (BAL)
Outputs 4 sets.....	Two sets of RCA SE & 2 sets of XLR transformer balanced outputs
Left and right Ground ON/OFF switch .....	Connects or disconnects the ground to the SE outputs

## Specifications

### 5 Inputs

- 3 sets of Single Ended inputs with an impedance of 100K Ohms
- 2 sets of true Balanced transformer inputs (pin 2 hot) with an impedance of 10K Ohms
- Maximum peak input level of 5 Volts RMS

### 4 Outputs + Headphone

- 1/4 TRS inch stereo headphone jack
- 4 Line outputs
- 2 sets of true Balanced transformer outputs (pin 2 hot) with an impedance 150 Ohms
- 2 sets of Single Ended outputs with an impedance 150 Ohms
- Maximum peak output level of 10Volts RMS +20dB
- Independent ground lift switches on the left and right Single Ended outputs
- 1 set of Single Ended Cinema bypass outputs from input #1

### Headphones

- Built in ~ 1 Watt class A-B headphone amp.
- 2 Volts headphone output.
- Frequency response 20Hz to 50KHz
- Total Harmonic Distortion ~ .02%

### Power

- Power consumption 27W, 0 drain when off
- Voltage 110/120V AC 60Hz
- Optional factory installed 220V or 230/240V AC 50/60Hz
- Standard 3 pin IEC power connector
- ON/OFF power switch conveniently located on the side panel
- Two internal high quality linear regulated power supplies, 250V and 12V

### Other Features

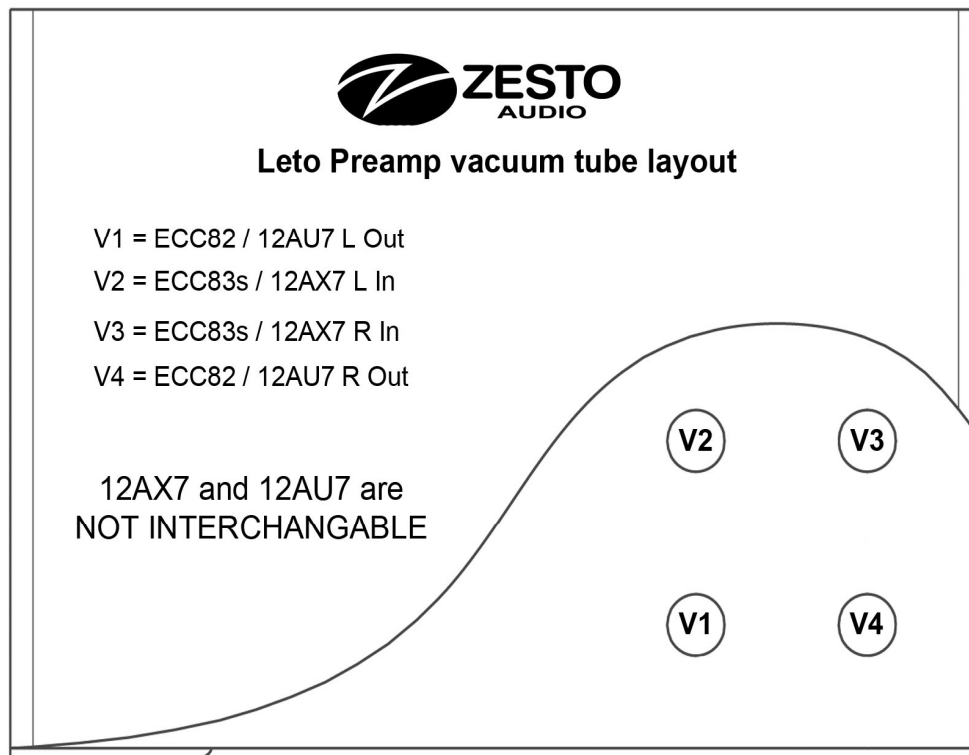
- Each unit is hand made in the USA
- 50 hour factory burn in on all circuits and vacuum tubes
- Dimensions 17" W X 12" D X 5" H
- Weight 23 lbs.
- 16 gauge zinc plated steel enclosure

## Detailed Specifications

- Unity gain volume indicator for home theater surround sound integration.
- Frequency response 20Hz to 50Khz ~ 1dB
- Total Harmonic Distortion ~ 0.02% at 1V RMS input
- Gain 12dB
- Signal to noise ~ 100dB below operating level
- Non inverting output polarity
- Cross talk >90dB
- Remote control volume, mute and mono
- Remote bypass switch on rear panel (just in case the remote is misplaced)
- 1% metal film resistors throughout
- Polypropylene capacitors throughout the audio path

## Vacuum Tubes

- Two (2) Gold pin JJ ECC83S/12AX7
- Two (2) Gold pin JJ ECC82/12AU7
- High quality gold pin ceramic sockets





## Hookup, Settings and Adjustments

### Before you start you will need:

RCA or XLR Interconnect cables to your system

### Proper Care of your Leto Preamp

#### Very Important Read First

**The simple rule to remember is to “turn on the preamp before turning on your power amp and turn off the power amp before turning off the preamp.”**

Not doing so may create a very loud noise that could damage your speakers or other equipment.

It is customary for vacuum tube equipment, when it is first turned on, while the unit is powering up, to have a brief initial “hum” coming from the unit, not from the speakers.

It is very important that all of your audio equipment is **turned off** or unplugged from the main power before attempting to install this unit.

Allow at least 30 minutes of warm up to get the best performance from the preamp.

#### Turn it on

Turn on the preamp using the ON/OFF switch located on the front left side. After a short time (about two minutes) the four tubes should start glowing. The amber glow will be the only visible indication that the unit is turned on.

If they don't, turn off the unit at the power switch and unplug the power cord. After waiting a few minutes unplug each vacuum tube in turn (using the glove provided) and make sure that none of the pins are bent. If they are please contact Zesto Audio for instructions.

**Caution:** Tube electronics should not be turned ON, then OFF, then ON again quickly. This could blow a fuse or create a hum. Once the unit is ON, it is safe to wait a minute before switching OFF. If you do get a hum, leave the unit off for 15 minutes.

#### Power

carefully plug in the AC power cable to the preamp first then to your main power.

#### Burn-in

Like all high end audio equipment, this Vacuum Tube Preamp can take **200 hours to break in**. For circuit testing and quality assurance, Zesto Audio ships all the Leto Preamps with at least **50 hours of factory burn-in**.

#### Vacuum Tubes

**Important!** First identify the two types of tubes as they are **NOT INTERCHANGEABLE**. Your input tubes are ECC83s (12AX7) and your output tubes are ECC82 (12AU7). Please note that failure to follow this warning can cause considerable damage.

Find the tube layout on page 8 in this manual in order to correctly plug in the right tube in the right socket. Using the glove provided, unpack and carefully plug in the four vacuum tubes making sure they are firmly pushed in all the way in their sockets. They can only go in one way.

#### Output

Using RCA or XLR interconnect cables; connect both the left and right outputs to your power amp.

#### Input

Using RCA or XLR interconnect cables; connect your sound sources to the inputs of the preamp.

#### Feet

Your unit is installed with four feet using #8-32 screws.

## Cinema Bypass

Input 1 RCA connector is tied directly to Cinema Bypass Out.

For example, you can plug your CD/DVD player into input 1 and take your Cinema Bypass output to your surround sound processor for your home theater system.

This function works without the preamp turned on.

## Remote

Remote has 3 functions: Volume, Mute, & Mono.

### Mute:

Every time you turn on the Preamp it is set to default on Mute.

Located on the front panel, far right, the Mute function is on when the Amber LED is illuminated.

Press the Mute button for on & off mute.

### Mono:

On the far right front panel the Mono function is on when the Green LED is illuminated.

This function adds Left plus Right. Press the Mono button for on & off Mono.

### Volume:

The left knob on front panel controls the volume.

The volume is indicated by the black dot on the knob.

### Remote Bypass Switch:

Located on the rear panel just in case the remote is misplaced.

Leave in down position.

Turn switch up to bypass Mute.



## Front Controls

### From left to right

#### (Left) 1/4" Headphone Jack

#### (Center Knob) = Volume:

The volume goes from 0 to 10 and is indicated by the black dot on the knob. This is either manual or controlled thru your remote.

#### Theater setting on Volume control:

Setting the volume control to "Theater" allows you to use your 2 channel system as part of your surround sound eliminating the extra equipment. This sets the preamp to unity gain.

#### (Right Knob) = Selector Switch:

You have 5 inputs. #1 is for your cinema bypass. This is a manual control.

#### LED lights:

Amber = Mute. Green = Mono.

The amber glow of the vacuum tubes is the only visible indication the unit is ON.

## Tips and Tricks

### Grounding

- Grounding switches apply to the outputs only.
- If you have RCA SE outputs, start with both ground switches up.
- If you have XLR outputs start, with both ground switches down.
- The ground switches work independently. You can adjust them for the least amount of noise.

### Example;

- Right channel up, left channel down.
- Right channel down, left channel up.
- Right channel up, left channel up.
- Right channel down, left channel down

### Volume control / internal gain adjustment

- Turning the volume control to “0” under certain circumstances may not necessary turn the volume all the way off. Press the mute button on the remote to turn the volume off.

### Internal gain switch

- The unit is designed to work with the volume control around the 12 o'clock position for normal operating volumes. If the volume control is at 3 o'clock or 9 o'clock you may want to contact your authorized dealer or the factory to adjust the internal gain of the unit.
- There are internal gain switches that switch between 12dB and 3dB of gain.
- At normal operating volume, the volume control should read around the 10 to 12 o'clock position.
- If the volume is less than the 9 o'clock position, the gain may need to be reset to 3dB.
- This usually happens with high gain power amps with 35dB and/or very high efficiency speakers.
- The factory default gain setting is 12dB.
- Units sold before January 2013, please contact the factory if a reset is needed.
- **Due to high internal voltages there are no user adjustable switches, only authorized representatives can make these adjustments.**

### Tube Rolling

**Important! The wrong type and placement of the tubes can cause considerable damage.** First identify the two types of tubes, as input and output tubes are **NOT INTERCHANGEABLE**. You may use any ECC83s (12AX7) or equivalent only for the input tubes and any ECC82 (12AU7) or equivalent only for the output tubes. See tube layout on page 8.

**!!! Any damage caused by tube rolling is not covered by the manufacturer's warranty.**

### Tube Rolling (The Sport of Audiophile Kings)

- The 12AX7 input tubes closest to the back/curve are the most sensitive and effective to tube roll.
- Only a 12AX7/ECC83s type will work and we recommend that it is high gain/ low noise.
- The unit is designed around the JJ's because they are neutral, consistent and are high gain/low noise.
- If your tastes are warmer, you may want to try Mullard's and if you like it brighter try GE.
- We cannot recommend any specific NOS tubes, as no 2 are the same. We prefer to encourage personal taste, trusting your ears and enjoying the sport.
- Any damage caused by tube rolling is not covered by the manufacturer's warranty.

### Power cord

- For best performance, the Leto responds better to higher quality power cords.

**Mute**

- When the mute is engaged it shorts out the output of the unit so there is no signal out. This can also be very helpful for trouble shooting hum and noise issues.

**Mono**

- This is very useful to test for correct phase in your system. When switched to the mono mode your stereo image should sound like it is in the center between your speakers. If the image goes all the way out or anywhere but center it is an indication that there is an out of phase signal in your system.

**Grounding**

- Leto grounding switches only affect the Single Ended outputs, not the Balanced outputs and work independently.

**Leaving the equipment on**

- The filament on the tube will burn out quicker if switched on and off more often.
- The tube will wear out quicker if it's left on all the time. There is no clear choice which is preferred.

### **Warranty**

All Zesto Audio equipment is covered by a 2 year limited warranty for parts and labor to cover defects in materials and workmanship and 6 month warranty on the original vacuum tubes from date of purchase.

To obtain this original owner warranty the completed warranty registration card should be emailed to the factory within 15 days from date of purchase. The warranty is not transferable.

This warranty is void if the product has not been used in accordance with the instructions found in this owner's manual, or if it has been misused, abused, damaged by accident or neglect, or in transport once in possession of purchaser. The warranty is also void if the product has been tampered with or has been repaired or modified by anyone other than Zesto Audio or its specifically authorized representatives. This limited warranty only applies to Zesto Audio equipment and carries no responsibility for any other equipment attached to this unit.

Zesto Audio will not warranty any damage caused by "tube rolling". The warranty only covers the use of 12AX7's and 12AU7's in their proper positions.

To return the product it must be packed in its original packaging and returned to Zesto Audio or its authorized representative via insured freight at the owner's expense. Returned products must be accompanied by written description of the defect and a return authorization number that is available from Zesto Audio or the authorized representative. Upon receipt of the defective product Zesto Audio or the authorized representative agrees to repair the product without charge for parts and or labor if within the 2 year warranty period, except for vacuum tubes if the unit is more than 6 months old. The product will then be returned via prepaid insured freight with a carrier at the sole determination of Zesto Audio or the authorized representative.

Zesto Audio and its partners reserve the right to modify their products or change specifications at any time without obligation or liability to previous purchasers.

Warranty will cover ownership outside the USA, but shipping is the sole responsibility of the owner. See your local dealer for factory approved service in your area.

Factory service on non-warranty items will be billed at an hourly rate to be quoted before work is done.